

CLAIMS

I claim:

1. A device for the intermittent dispersal of a fluid, the device comprising:
a reservoir adapted to contain a compressible medium and to receive a fluid providing
5 an increasing pressure in the reservoir;
a housing in fluid communication with the reservoir, the housing adapted to be in
fluid communication with a source of the fluid, the housing in fluid communication with a
liquid dispersion configuration;
a valve member at least partially contained within the housing, the valve member
10 being movable (i) from a closed position to an open position when the pressure in the
reservoir equals or exceeds a first pressure level, and (ii) from an open position to a closed
position when the pressure is less than or equal to a second pressure level, the second
pressure level being lower than the first pressure level;
wherein the valve member obstructs the flow of the fluid from the reservoir to the
15 liquid dispersion configuration in the closed position and permits the flow of fluid from the
reservoir to the liquid dispersion configuration in the open position; and
2. The device of claim 1, wherein expansion of the compressible medium
maintains the liquid contained in the reservoir in a pressurized state as the liquid is expelled
from the reservoir outlet.
- 20 3. The device of claim 2, wherein the compressible medium is a gas.
4. The device of claim 2, further comprising a biasing mechanism providing a
retention force to hold the valve member in the closed position against the fluid under
increasing pressure from the reservoir whereby the valve member moves toward the open
position when the retention force is met;

5. The device of claim 4, the biasing mechanism further providing a return force, whereby the valve member moves toward the closed position when the return force is met;

6. The device of claim 5, whereby the force created by the compressible medium at the first pressure level is substantially equivalent to the retention force; and

5 7. The device of claim 6, whereby the force created by the compressible medium at the second pressure level is substantially equivalent to the return force.

8. The device of claim 5, wherein the biasing mechanism includes at least one magnet and at least one magnetic attractor, the at least one magnetic attractor being coupled with one of the housing and the valve member, the at least one magnet being coupled with the
10 other of the housing and the valve member.

9. The device of claim 4, wherein at least a portion of the retention force includes a magnetic force between the at least one magnet and the at least one magnetic attractor when the valve member is in the closed position.

10. The device of claim 4, wherein the biasing mechanism includes a
15 counterweight coupled with the valve member, and wherein at least a portion of the retention force is a gravitational force acting on the counterweight and the valve member.

11. The device member of claim 1, the liquid dispersion configuration comprising at least one sprinkler head.

12. The device of claim 1, the reservoir including an emitter for regulating the
20 flow of fluid from the fluid source into the reservoir.

13. A device for the intermittent dispersal of a fluid, the device comprising:
a reservoir;
a housing in fluid communication with the reservoir, the housing adapted to be in
fluid communication with a source of the fluid, the housing in fluid communication with a
25 liquid dispersion configuration;

a valve member at least partially contained within the housing, the valve member being movable (i) from a closed position to an open position when the pressure of the fluid in the reservoir equals or exceeds a first pressure level, and (ii) from an open position to a closed position when the pressure of the fluid is less than or equal to a second pressure level,
5 the second pressure level being lower than the first pressure level;

wherein the valve member obstructs the flow of the fluid from the reservoir to the liquid dispersion configuration in the closed position and permits the flow of fluid from the reservoir to the liquid dispersion configuration in the open position; and

wherein the fluid pressure at the source of the fluid is substantially isolated from the
10 change in fluid pressure at the liquid dispersion configuration when the valve member moves from the closed position to the open position.

14. The device of claim 13, whereby said change in fluid pressure at the liquid dispersion configuration is offset by the fluid pressure in the reservoir decreasing from the first pressure level to the second pressure level such that the pressure at the source of the fluid
15 is not substantially affected by the change in pressure at the liquid dispersion configuration.

15. The device of claim 14, further comprising a biasing mechanism providing a retention force to hold the valve member in the closed position against the fluid under increasing pressure at the second port whereby the valve member moves toward the open position when the retention force is met;

20 16. The device of claim 15, the biasing mechanism further providing a return force, whereby the valve member moves toward the closed position when the return force is met; and

17. The device of claim 16, wherein the biasing mechanism includes at least one magnet and at least one magnetic attractor, the at least one magnetic attractor being coupled

with one of the housing and the valve member, the at least one magnet being coupled with the other of the housing and the valve member.

18. The device of claim 17, wherein at least a portion of the retention force includes a magnetic force between the at least one magnet and the at least one magnetic attractor when the valve member is in the closed position.

19. The device member of claim 13, the liquid dispersion configuration comprising at least one sprinkler head.

20. The device of claim 13, the reservoir including an emitter for regulating the flow of fluid from the fluid source into the reservoir.